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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,149	11/17/2003	Chris Kiyoshi Togami	15436.249.42.1	5300
22913 7590 01/29/2007 WORKMAN NYDEGGER (F/K/A WORKMAN NYDEGGER & SEELEY) 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			EXAMINER CONNELLY CUSHWA, MICHELLE R	
			ART UNIT	PAPER NUMBER
			2874	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/29/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/716,149

Applicant(s)

TOGAMI ET AL.

Examiner

Michelle R. Connelly-Cushwa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 16-22 and 24-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 13, 14, 20-22, 24-27 and 36 is/are allowed.
- 6) ☒ Claim(s) 1-12, 16-19, 28-35 and 37-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/6/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's Amendment filed October 2, 2006 has been fully considered and entered.

### ***Information Disclosure Statement***

The prior art documents submitted by applicant in the Information Disclosure Statement filed on October 6, 2006 have all been considered and made of record (note the attached copy of form PTO-1449).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-12, 16-19, 28-35 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gregory (US 6,305,848 B1) in view of Flickinger et al. (US 6,517,382 B2).**

Regarding claims 1, 2, 10, 16 and 37; Gregory discloses an optoelectronic optical transceiver module array system comprising:

- a host board (mother board, 14);
- a plurality of daughter cards (20) that are each operably connected to the host board at an angle; and

- a plurality of optoelectronic modules (transceivers, 28; see column 5, lines 16-35) that are connected to a respective one of the daughter cards.

Gregory does not disclose that the plurality of optoelectronic modules are each removably connected. In fact, Gregory teaches that the modules are connected to the daughter cards via soldering (see column 5, lines 64-67).

Flickinger et al. discloses a pluggable module and receptacle for use with optoelectric module connected to printed circuit boards. Flickinger et al. teaches that historically optoelectric modules have been connected to circuit boards (daughter cards are circuit boards) via soldering, which is disadvantageous because of either the heat required to achieve reflow can damage the components of the module or the hand soldering dramatically increases assembly cost. Flickinger et al. teaches that a pluggable module and receptacle that is removably connected to the circuit board may be used to overcome the problems with the prior art (see the entire disclosure).

Therefore, one of ordinary skill in the art would have found it obvious to incorporate a pluggable module and receptacle in the invention of Gregory in place of the soldered module or to use the pluggable module and receptacle in a device comprising daughter cards connected to a host board as disclosed by Gregory, since arrangements including daughter cards connected to host boards are well known in the art in order to provide a pluggable module and receptacle that does not require increased assembly cost due to hand soldering, to reduce the risk of damaging components due to the heat required to achieve reflow, to further allow the modules to

be easily replaced if damaged and to use the pluggable module and receptacle of Flickinger et al. with a well known arrangement of daughter cards and a mother board.

Regarding claims 3 and 17; Flickinger et al. teaches that a daughter card surface of the daughter card (10) includes a connector receptacle (20) for removably receiving a card-edge connector of a respective one of the optoelectronic modules (40; see Figures 1 and 4) to electrically connect the module to the daughter card.

Regarding claims 4, 5, 12 and 39 and further regarding claims 16 and 37; Gregory teaches that a plurality of modules are connected to one of the plurality of daughter cards, therefore, one of ordinary skill in the art would have found it obvious to provide a plurality of cages, wherein each cage is connected to one of the plurality of daughter cards, and wherein each cage removably receives one of the plurality of optoelectronic modules such that each optoelectronic module (40 in Flickinger et al.) operably connected to the respective daughter card (10 in Flickinger et al., which corresponds to 20 in Gregory) via the respective cage (20 in Flickinger et al.).

Regarding claim 6; each cage (20) is three-sided and provided electromagnetic (EMI) shielding for the respective optoelectronic module (40; see column 2, line 40, through column 3, line 21 of Flickinger et al.).

Regarding claim 7; Flickinger et al. teaches that each optoelectronic module includes a latching mechanism (48; see Figure 5) that selectively secures the optoelectronic module in a fixed position with respect to the hot board to which the daughter card and receptacle are attached.

Regarding claims 8 and 38; the latching mechanism (48) is a lock pin that engaged a hole (46) defined in the respective cage to secure the optoelectronic module.

Regarding claim 9; the proposed combination of references suggests all of the limitations of claim 9, except for explicitly stating that at least two optoelectronic modules are connected to at least one of the daughter cards, however, one of ordinary skill in the art would have found it obvious to connect any desired number of optoelectronic modules to one of the daughter cards in the releasable manner disclosed by Flickinger et al., including at least two modules in order to increase the number of signals that can be transmitted, received and processed by the daughter card.

Regarding claim 11; Gregory further teaches that a plurality of optical fiber connectors (42) are each connected to optical portion of a respective one of the transceiver modules (28), wherein each optical fiber connector a release sleeve (the portion of 40 associated with each connector, 42) that slides along the optical fiber connector (42) to engage and disengage the connector to and from the optical ports..

Regarding claim 18; each cage (20) provides a ground plane for the respective module (40; see Flickinger et al.).

Regarding claim 19; each transceiver module includes two optical ports and the daughter boards are perpendicular to the host board (see Gregory).

Regarding claims 28 and 29; neither Gregory or Flickinger et al. state that the optoelectronic modules are SFP or XFP modules. Gregory does teach that at least a double fiber connector is used. One of ordinary skill in the art would have found it obvious to incorporate any standard type of module in the invention of Gregory and/or

the invention of Flickinger et al., including an SFP or XFP module, since it appears the invention would perform equally well regardless.

Regarding claims 30, 31 and 33; the module (40; see Flickinger et al.) includes an outer housing that is received within a respective one of the cages (20) when the optoelectronic modules are removably received within a respective one of the cages.

Regarding claims 32, 34 and 35; the plurality of daughter cards (20; see Gregory) are each operably connected perpendicularly to the host board (14), the plurality of daughter cards being positioned parallel to one another; and the plurality of modules are each removably connected (as taught by Flickinger et al.) to the respective one of the daughter cards such that a surface defining the width of each module is positioned parallel to a surface of the respective daughter card, the daughter card surface being perpendicular with respect to the host board; each module is oriented in an edge-on orientation with respect to the host board and positioned so that spacing between each module is minimized.

***Allowable Subject Matter***

Claims 13, 14, 20-22, 24-27 and 36 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the invention of claims 13, 14, 20-22, 24-27 and 36 distinguishes over the prior art of record because none of the reference either alone or in combination disclose or suggest:

- an optical device as defined in claim 13, wherein each latching mechanism further includes two curved recesses that are defined in

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surfaces of the respective transceiver module to each movable receive an end portion of the bail in combination with the other limitations of claim 13; or

- an optical transceiver module as defined in claim 20, wherein the release sleeve includes a body defining open first and second ends, wherein a portion of the body further defines a curved inner surface in combination with the other limitations of claim 20.

Claim 14 depends from claim 13; claims 21, 22, 24-27 and 36 depend from claim 20.

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.



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*Michelle R. Connelly-Cushwa*  
Michelle R. Connelly-Cushwa  
Patent Examiner  
January 18, 2007